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ABSTRACT

A study was designed to measure the effects of the source's body type--endomorph (fat), mesomorph (muscular), and ectomorph (thin)--in relation to his perceived credibility by the receiver. Five hundred subjects were randomly selected from a basic communication course and, in groups of twenty in a classroom setting, were each given a noncontroversial speech in manuscript form together with a picture of an assigned source. After reading the message, the subject then filled out a semantic differential designed to measure four dimensions of source credibility. Besides the three body type conditions, there was a control condition in which the subjects evaluated the source in the absence of a picture. The basic design was replicated for male and female sources. Sex of source, sex of respondent, and the three body type conditions were the independent variables analyzed, and results showed that there were no differences between credibility according to body type, although the ectomorph female was rated highest on the sociability dimension of source credibility. (Author/SH)

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THE RELATIONSHIP OF SOMATOTYPE TO SOURCE CREDIBILITY

By

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ABSTRACT

The Effects of Somatotype on Initial Source Credibility
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Research has shown that there is a direct correlation between the body type (somatotype) of an individual and his personality. The research in our field has been severely lacking in this area. The research that has been done has dealt primarily with the effects of the three body types (endomorph, mesomorph, and ectomorph) on the self-concept of the source. This study was designed to measure the effects of the source's body type in relation to his perceived credibility by the receiver.

Five hundred subjects were randomly selected from the basic communication course at Illinois State University. The experimental setting was a classroom where, in groups of about twenty, the experimenter gave each subject a non-controversial speech in manuscript form, and a picture of an assigned source. After reading the message the subject then filled out a semantic differential designed to measure four dimensions of source credibility. Besides the three body type conditions, there was a control condition in which the subjects evaluated the source in the absence of the picture. The basic design was replicated for male and female sources.

Sex of the source, sex of the respondent, and the three body type conditions generated a 2x2x3 analysis of variance design. It was hypothesized that the mesomorphic condition would be higher on all credibility dimensions than either the endomorph or the ectomorph. This hypothesis was not supported. Subsequent testing using the Studentized Range Test indicated that the ectomorph female was rated higher than any other stimulus on the dimension of sociability. This reflects the "think thin" attitude of the American culture with regard to women.

Nonverbal communication utilizes many concepts and principles operative in related disciplines, and as a field for empirical research this nonvocalic form of communication is still in its infant stage. There has been little research conducted using communication variables as they relate to and are affected by somatotype; and there has been no receiver oriented research in this area. The research that has been conducted in the area of somatotyping (body typing) has formulated in three main areas; namely: classification, self-concept, and trait perception, which is commonly referred to as stereotyping of the source's personality. The research in the latter two areas is of particular significance to the field of communication. The research that has been conducted concerned itself with the effects of somatotyping on the source of communication. Researchers have been concerned with how he forms his own self-concept, and how he reacts to the perception of others. The assumption that an individual's self-concept is related to his body type has been supported by the experimentation of Parnell (1958) and Seigall(1961). Further research has indicated that there is a high correlation between the body type of an individual and the perception of that individual's personality traits by another (Well and Seigal, 1961). Thus, one may conclude that the body type of an individual plays a prominent role in both his intrapersonal and interpersonal encounters, however, the degree to which the aforementioned relationships effect the communication process has not been empirically tested to date. The present study was conducted in an attempt to measure the effects of somatotype on the receiver in the communication process, and to offer a method by which one can determine the extent of the effect of somatotype on the initial credibility of the source of communication.

There are several characteristics of this study that are susceptible to observation. The somatotype classifications that were used were endomorph (plump or fat), mesomorph (muscular or athletic), and ectomorph (thin or skinny) (Sheldon, 1945; and Parnell, 1958). The source, or stimulus, clearly fell into one of these classifications. The design also controlled the sex of the stimulus, and the sex of the respondent. The final analysis produced measures for both male and female, Ss responding to both male and female stimuli, in all three of the somatotype conditions.

A fundamental assumption of this study is that initial credibility, or first impression, is a significant variable in the formation of a receiver's attitudes toward a source (Asch, 1946; and McCroskey, 1969). This assumption has

been tested and supported (Anderson and Clevenger, 1963). The research in the area of somatotypes has almost entirely been conducted in psychology and its related disciplines.

The initial research in the field of somatotype was prompted by the need of the medical profession for general working definitions of distinctive body structures or types. The majority of people in this field agree that there are three basic body types (Sheldon, 1940), namely: endomorph, mesomorph and ectomorph. Sheldon described an endomorph as plump or fat, a mesomorph as muscular or athletic, and an ectomorph as thin or skinny. It should be noted at this point that these classifications are ideal types, and that no perfect example of any of them exists. Each of these body types were rated by Sheldon on a subjective basis, according to the degree to which the body demonstrated each classification. For example, a very fat man would (ideally) be rated as 9-1-1. On the Sheldon nine scale, that man would get a nine for endomorph (fat), a one for mesomorph (muscular), and a one for ectomorph (skinny).

Although the general categories have remained the same, Sheldon's method of measuring failed to meet the scientific criteria set forth by the medical profession. Parnell (1953) developed a method of classifying body types which became widely accepted. The degree of endomorph characteristics was determined by measuring the depth of fat underneath the bicep muscles of the upper arm, and in the skin folds of the stomach area. The instrument that was used is called a skin caliper. Secondly, mesomorphy was measured by the length and development of the bones, and muscles in the arms and legs. Finally, ectomorphy was measured by the height of the subject divided by the cube root of his weight. Parnell's system seemed to satisfy the question of classification and measurement.

Upon completion of an adequate classification system, the researchers devoted their energies to establishing the effects that an individual's body type has on his personality. Although some of the earlier studies were conducted with this goal in mind (Sheldon, 1942; Sheldon, 1949), they generated many questionable generalizations. The first good study that was conducted in this area was that of Glueck and Glueck (1950), and they found that there was a correlation between the somatotype of a delinquent boy and his personality. They found that mesomorphs exhibited the traits of assertiveness, aggressiveness, and extroversion. However, they found no significant results for either the endomorphs or the ectomorphs. These results were duplicated in subsequent studies (Wielker, 1951; Parnell, 1958). A study conducted by Cortes and Catti (1965) found that

ectomorphs had the greatest need for sex, followed by the mesomorphs, and to a slightly lesser degree the endomorph. Furthermore, using the Allport Study of Values, they found that the mesomorph had the highest masculine qualities. Finally, in another study conducted by Cortes and Catti (1970) it was found that each of the body types had its own characteristics of self-concept. The endomorph considered himself as calm, relaxed, cooperative, tolerant, sympathetic, affectionable, kind and sociable. The mesomorph considered himself as being dominant, cheerful, competent, energetic, active, competitive, independent, and talkative. The ectomorph described himself as being detached, tense, anxious, meticulous, thoughtful, self-concious, cool, tactful, serious and withdrawn.

Research has also been conducted in the area of receiver perception of source personality in response to somatotype (Well and Seigal, 1961). Their findings indicated a high correlation between the body type of an individual and how other people initially perceive him. They found that subjects factored out specific personality traits for each body type. The Ss were shown silhouettes of the three body type conditions. They attributed the following traits to the endomorph: fatter, older, shorter (even though they were all the same height), old fashioned, lazier, less strong, less attractive, more talkative, more sympathetic, and more trusting. The mesomorph was considered: stronger, younger, more masculine, more attractive, taller, more mature, more independent. The ectomorph was thought to be: thinner, younger, taller, suspicious of others, nervous, less masculine, stubborn, and pessimistic. These results were replicated by the study conducted by Niker and Miller (1967). Wilson (1969) found that the taller an individual was perceived to be, the greater the status people assigned to him. It has been conclusively shown that the physique of an individual is a factor considered by people when they form judgments about him (Walker, 1963; Ruft, 1966; Carring and Nayer, 1966; and Tagiuri, 1968).

As was previously stated the basic assumption that this study was based on is that source credibility has been proven to be a significant dimension of the communication process and it is considered the dependent variable in this study. With the development of factor analyses, the measurement of source credibility has been greatly enhanced. The first major analytic study was done by Berlo, Lemert, and Mertz (1969). They found three dimensions of source credibility: competence, trustworthiness, and dynamism. In other studies, the number of dimensions vary. McCroskey (1966) found two dimensions that were similar to Berlo's. Whitehead (1968) found four dimensions,

the fourth being objectivity. Griggin (1967) found six dimensions that included expertness, reliability, intention, dynamism, personal attractiveness, and majority opinion. Following one of his own studies, Markham (1968) found five other dimensions. They were not only concerned with the cognitive aspects of credibility, but also with the socio-motor skills of the source. The dimensions were: morality, bodily skill, data evaluation, speed, and extroversion.

One of the most recent studies conducted by McCroskey (1971) produced a total of six dimensions for spouses and peers. The dimensions were competence, composure, sociability, dynamism, character, and extroversion. However, in the case of the peer stimulus, character and extroversion were not significant dimensions.

Therefore, with the research to date one should conclude that credibility plays a large role in the communication process, however assumptions cannot be made about it in too many areas. Credibility varies from time to time, culture to culture, and situation to situation.

Since research has shown that there is a significant correlation between somatotype and personality perception; and that initial credibility is related to receiver perception, the authors tested the following hypoteses:

HYPOTHESIS I — Mesomorphs will initially be perceived as having higher credibility than endomorphs.

HYPOTHESIS II — Mesomorphs will initially be perceived as having higher credibility than ectomorphs.

The body types of the stimuli (independent variable) were those suggested by Sheldon, namely: endomorph, mesomorph, and ectomorph. The examples of these were selected on the basis of the subjective opinion of the researchers. The criteria was that the body types were easily recognizable as being in one specific category.

METHOD

SUBJECTS

The subjects were selected from the basic speech-communication course at Illinois State University, producing a N of 493. The subjects were in groups of approximately eighteen, this being the average class size on any given day. The classes were randomly assigned to a

somatotype condition according to availability. Eight classes were randomly assigned to each body type condition, four with male body type and four with female body type in each condition. Eight classes were randomly assigned to the control condition which merely received the message and then the semantic differential type scales.

PROCEDURE AND MATERIALS

The message that was used in this study was a non-controversial speech about the methods of sociological inquiry designed by the researchers. The message was presented to the subjects by an experimenter (a graduate assistant) at Illinois State University, and having read the message, the subjects were shown two pictures alleged to be the source of the speech. The two pictures were of the same body type condition presented sideways and facing the camera. The pictures were cropped to eliminate the uncontrollable variables of facial expression, attractiveness and style and length of hair. Black and white film was used to eliminate the color variable and the clothing styles were kept neutral to control for the clothing variable. The subjects were then given the semantic differential type scales and asked to rate the source. The semantic differential type scales consisted of nineteen bi-polar adjectives which were cheerful-gloomy, sympathetic-unsympathetic, calm-anxious, poised-nervous, nice-awful, qualified-unqualified, expert-inexpert, attractive-repulsive, mild-headstrong, responsible-undependable, extroverted-introverted, silent-talkative, untrained-trained, bold-timid, meek-aggressive, unfriendly-friendly, inexperienced-experienced, excitable-composed, irritable-good natured. These scales were designed by McCroskey (1966) and factored out into four dimensions of source credibility: dynamism, composure, competence and sociability. Contamination due to the interaction of subjects was controlled by delaying the debriefing until the experiment was completed in all class sections.

ANALYSIS DESIGN

The independent variables were sex of stimulus, somatotype of stimulus, and sex of subjects. The dependent variable was perceived credibility of the source. The data were submitted to principle components factor analysis and varimax rotation. An Eign value of 1.0 was established as the criterion for termination of factor extraction. For an item to be considered loaded on a resulting factor, a loading of .60 or higher was required, with no secondary loading of .40 or higher.

A 2 x 4 x 2 analyses of variance with unequal N were used to test for the hypothesized differences.* Results were tested for significance on a table of F distribution and subjected to a student's t-test where appropriate to test for significance. The .05 level of significance was required for all statistical tests.

RESULTS

Factor analysis yielded four independent dimensions of source credibility labeled: sociability, competence, composure, and dynamism. All of the scales used factored out onto one of the four dimensions.

The three-way analysis of variance yielded no significant main effect on any of the four credibility dimensions. The two hypotheses were not supported. However, a significant effect was produced by the interaction of stimulus body type and the sex of the stimulus. It was noted that the female ectomorph was rated higher on the dimension of sociability than all of the other conditions. The mesomorph male was not, however, significantly lower than the female ectomorph. There was no significant effect produced by the interaction of the body type and the sex of the respondent; the sex of the stimulus and the sex of the respondent; or the body type, sex of stimulus and sex of respondent.

DISCUSSION

The results would indicate that credibility as induced by the body type of the individual is relevant only on the dimension of sociability. One could propose that there is an attraction measure indicated here. The respondents only discriminated on the basis of the sociability of the stimulus, and not on competence, composure or dynamism. Sociability was measured by the scales: nice-awful, sympathetic-unsympathetic, friendly-unfriendly, and attractive-repulsive. The female ectomorph was rated higher on this dimension by males than females, but not significantly higher. The mesomorph male was also rated high on the sociability dimension. The ratings for male and female respondents were almost identical for this stimulus. The endomorphs were rated the lowest of all the stimuli on the sociability dimension. This gradation from endomorph to ectomorph in ratings reflect the "think thin"

* Note: Computer program used was developed by Dr. Joseph Sagebiel of Illinois State University.

attitude the American culture has toward women; and the stereotyped virile-athletic male.

These results support the recent findings in credibility at the Communication Research Center at Illinois State University. It is now evident that the dimensions of credibility differ with the source, receiver, and setting. Furthermore, the results indicate the need for further study in the area of credibility and attraction .

In summary, therefore, it has been found that the nonverbal cue of somatotype does effect the receiver perception of an individual on the sociability dimension of source credibility.